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Managers as Agents Without Principals: An Empirical Examination of Agency and Constituency Perspectives

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Abstract

This study empirically investigates the propositions, generated from the agency and the constituency perspectives, about the nature of managerial role. It is argued that managerial role can be conceptualized as an integral part of the existing outcome interdependencies and power relations among a set of constituencies. By using longitudinal data on 160 companies in 10 manufacturing industries, it was found that there exist both competitive and symbiotic outcome interdependencies among the constituencies of organizations, and that the nature of these interdependencies are related to the long-term average outcomes of these constituencies. Implications of these findings on the symbolic role of managers are discussed. (Managerial role; agency theory; constituency perspective; managerial decision making)

Managers as Agents without Principals: An Empirical Examination of Agency and Constituency Perspectives

In analyzing the role of managers in organizations three different areas of inquiry have produced three alternative approaches. In economics and finance, theories of the firm are based on the assumption that the manager's role is essentially one of an agent. Managers, as the agents of the principal owners or the residual claimants, operate within the contingent limitations of property rights, agency costs and managerial contracts. In organization theory, the role of the manager is framed within the assumption that organizations are coalitions of interest groups with different and often conflicting demands and expectations. Within this framework, the behavior of the manager is explained in terms of the power distribution among the coalition members who represent the constituencies of the organization. Finally, in the area of strategic management, a third approach has recently been introduced. The stakeholders approach argues that the behavior of the manager is shaped by those groups and individuals who can affect and be affected by the achievement of an organization's mission. The manager's role is to develop strategies that can deal with all the stakeholders who can substantially affect the operations of the business. The stakeholders approach, as an action-oriented framework, focuses on manager's role in enhancing the strategic management capability of the organization.

The basic objective of this paper is to compare these three alternative approaches in terms of their theoretical implications and to empirically test a set of hypotheses based on these implications.

Finally, an attempt will be made to integrate these alternative approaches by identifying their commonalities.

Background

Since the first publication of "The Modern Corporation and Private Property" by Berle and Means (1932), economists have been interested in the role of managers. The introduction of the manager into the economic scene of the firm required modifications in the classical model of the firm, in which the owner-manager single-mindedly operated the firm to maximize profits. The separation of security ownership and control, typical in large corporations, produced two distinct approaches to deal with the question of management incentive problem--problems which arise when decision-making in a firm is under the control of managers who are not the firm's major security holders. One distinct approach has focused on the motivation of managers and has required modifying the classical assumptions of "the economic man." Behavioral or managerial theories of the firm developed by Baumol (1959), Simon (1959), Cyert and March (1963) are classic examples of this approach. More recently a second approach, developed by Alchian and Demsetz (1972) and Jensen and Meckling (1976), defined the management incentive problem in terms of agency costs and property rights. This new analytical formulation of the relationship among owners and managers focused on two interrelated questions: 1) if the separation of ownership and control produces incentive problems in terms of monitoring costs, information assymetry and conflicting preferences, then is there an optimum ownership structure within which these costs can be minimized?;

and 2) given that the existence and survival of corporate form indicates that it is an efficient form, what structural characteristics are responsible for its efficiency and as a result its survival? (Fama and Jensen, 1983)

Attempts to answer the first question have led to investigations of the relationship between the inside equity held by the managers, outside equity owned by the shareholders, and the debt held by anyone outside the firm with respect to certain agency costs. Agency costs are assumed to vary according to their sources. Those agency costs arising from divergent incentives of owners and managers will be borne by managers; those arising from the diverse incentives of shareholders and bondholders will be borne by shareholders and will be reflected in the reduced price which investors will pay for the firm's bonds. In the final analysis, it is argued that there is an optimum combination of debt, outside equity, and inside equity which will reduce the total agency costs for all the parties concerned.

The answer to the second question is being sought within the framework of organizational decision-making. In broad terms, the decision-making steps, which include four distinct stages--initiation, ratification, implementation, and monitoring--are allocated across agents in such a way that the corporate form acquires its efficiency. What is important in the separation of ownership and management is that the decision making rights (initiation and implementation steps) and decision control rights (ratification and control) are allocated to separate agents. As a result, the separation of residual risk bearing (ownership) from management leads to decision systems that separate

decision management from decision control. There are several factors identified in the economics and finance literature that make such a separation efficient. First, because in most complex organizations specific knowledge is diffused among agents, those who have relevant and valuable knowledge are assigned to make different decisions. Second, the development of hierarchical partitioning of decision process makes it more difficult for decision agents at all levels of the organization to take actions that benefit themselves at the expense of other agents. Thus the structural mechanisms both reduce the agency costs and also make efficient decision making possible.

These questions and the search for answers currently represent a distinct stream of literature in finance and economics which constitutes agency/ownership structure theory. Within this theoretical perspective, contrary to the behavioral theories of the firm, the classical assumptions of economic behavior are not rejected but what is rejected is the classical definition of the firm. As Fama (1980) argues, the firm can be seen as a nexus of contracts among factors of production where each factor is motivated by its self-interest.

Organization theory, particularly the resource dependency perspective (Pfeffer and Salancik, 1978), presents an alternative argument on the nature and the role of managers in organizations. It starts with the premise that every organization, in order to be viable, must take into consideration the demands of different constituencies with conflicting interests. Constituencies of any organization are continually evaluating their relationships with the organization on the basis of

different criteria and deciding whether to remain in the coalition or to alter their relationship with the organization. The coalition view of organizations assumes that there will be conflicts over objectives rather than consensus over one or a few organizational goals (Pfeffer, 1978). Some empirical evidence supports the view that organizations serve many constituencies with conflicting criteria. Friedlander and Pickle (1968) show that organizational effectiveness, when evaluated from the perspectives of the owners, employees, creditors, suppliers, customers, or the government, is a function of these different constituencies' assessment of organizational performance. Their research also indicates that the organization cannot simultaneously satisfy its constituencies' demands equally well. The role of the manager is to establish a meaningful balance between the demands of these diverse constituencies and to assure the continuation of the existing coalition. In this sense, the managers are in a position of simultaneously solving multiple and often conflicting preference problems. This ambiguous role of the manager is the outcome of 1) lack of clear identification of the constituencies' preferences, 2) sudden and unpredictable changes in the preferences and the composition of the coalition, and 3) the contradictory or unrelated nature of these preferences.

Similarly, in the legal field the new perspectives on relational contract law reinterpret the agent-principal relationship in contemporary society as agents with constituencies. In this view, the stockholders of a firm are no longer a principal group with real dominion, but simply one of many constituencies of management. (MacNeil, 1980)

In the contemporary world of contractual relations among agents, these relations are organized around the hierarchies and/or power of the constituencies. Today managers as agents are subject to the pressures of multiple constituencies, including those of which they themselves are members.

Within the context of the resource dependency perspective the role of manager is not one but tripartite. As Pfeffer and Salancik (1978) argue, managers must satisfy symbolic, responsive and discretionary role requirements in order to maintain the existing coalition of interest groups. Managers in their symbolic role personify the individual control over social actions and outcomes, and provide the prospect of stability for the social system (1978:263). In their responsive role, managers attempt to balance the demands and constraints confronting the organization by deciding which demands and interests should receive priority given the power structure of the existing coalition. In their discretionary role, managers attempt to change the organization's context by generating new coalitions of interest groups which makes the organization more viable.

The stakeholders approach developed in the strategic management literature emphasizes the responsive and discretionary roles of managers in developing strategies for accomplishing the mission of the organization. In this sense, the approach is action oriented. (Schendel and Hofer, 1979; Freeman, 1983) By expanding the concept of constituency, it includes all the parties which may have an effect or be affected by the organization. In contrast to the constituency approach, it identifies stakeholders as constraints and opportunities for the development

of effective managerial strategies. It emphasizes the ways in which the stakeholders can be identified, and utilized for the development of strategies of action. Because of these characteristics the approach is more concerned with the prescriptive implications of the framework rather than its theoretical implications.

Conceptually, the stakeholders approach makes a distinction between the external and internal stakeholders vis-a-vis the organization and the managers. Owners, customers, employees, and suppliers are considered to be internal stakeholders because of their direct interaction with the organization. The government, competitors, consumer advocates, environmentalists, and other special interest groups are the external stakeholders. Although these parties do not enter into direct transactions with the organization, they can and do have an important effect on the formulation of strategic decisions by the managers. The similarity between the resource dependency and the stakeholders approaches is essentially with respect to the internal stakeholders. As the main constituencies of the organization, internal stakeholders are the direct participants in the dominant coalition and, therefore, are involved in the development of the negotiated environment of the organization. External stakeholders, on the other hand, are the constraints in the larger environment, whose basic role is to influence the legitimization of the organization.

Communalities and Differences Between Perspectives

It is clear that the major question posed by these three perspectives is how to characterize the role of the manager with respect to

some major parties involved in the formation and continuation of an organization. The common denominator in all these perspectives is that managerial role is defined with respect to a group of participants. Whether they are called the factors of production, constituencies of the dominant coalition, or the external and internal stakeholders, the nature of the relationships among these participants and the managers determine the role, behavior and the strategic decisions of managers. What distinguishes these approaches is who should be included in this set. Once this question is answered, then the relationship between the managers and the members of the set can be identified and analyzed. For the agency theory the set includes the residual claimants (equity holders) and the debtholders. In organization theory, these parties as well as all the other direct participants including employees, suppliers, short term creditors, and customers are included in the set. In the stakeholders approach the set is extended to those parties who are not directly involved in resource transactions with the organization but who can affect or be affected by the organization's goals and actions.

In analyzing the relationships among these parties, empirical research within each perspective has concentrated on certain specific relationships between different participants, management, and the performance of the organization. Within agency theory one of the most commonly investigated empirical problems has been the relationship between types of ownership and organizational performance. The empirical evidence so far, however, is very mixed. Some researchers have found the separation of ownership to be associated with a low return on investment (Kamerschen, 1968; Palmer, 1973), a high return on investment

(Ware, 1975), no strong relationship (Larner, 1970; Sorensen, 1974; Holl, 1975; McKean and Karia, 1978), or identified differences in the strategic choices and management processes between privately and publicly held companies (Trestel and Nickols, 1982).

The empirical research questions asked within resource dependency perspective is much more extensive. They range from questions concerning executive succession, joint ventures to the composition of the boards of directors. However the research question is defined, the main theoretical concern of most research in this area is to provide evidence that organizations are other directed involving constant rearrangement of interdependencies for organizational autonomy and discretion. In other words, interdependence, which characterizes the relationship between agents contributing to an outcome, is critical for understanding the behavior of interest groups both within and outside the organization. When the outcomes achieved by one agent are interdependent with, or jointly determined by, the outcomes achieved by another agent there exists an outcome interdependency between these two interest groups. The nature of the outcome interdependence determines whether the relationship between these groups are competitive or symbiotic. In the case of competitive interdependence, one party's gain is the other party's loss as in a zero-sum game. In the case of symbiotic interdependence, it is possible for both parties to be better or worse off simultaneously. (Pfeffer and Salancik, 1978) Whether the outcome interdependency is competitive or symbiotic, the simultaneous relationship further determines the power relationship among the interest groups. As long as the outcome interdependence is not symmetric or

balanced, some degree of outcome control power will develop. The logic of outcome interdependence is especially found useful in understanding the forms of interorganizational coordination. (Pate, 1969; Pfeffer, 1972)

Research questions formulated within the stakeholders approach tends to be more prescriptive. (Freeman, 1984) In the final analysis, however, the limited empirical work within this perspective also produces similar results as predicted by the resource dependency. (Ahoroni, Maiman and Segev, 1978)

When compared, these approaches make the following basic predictions about the relationships between different participants, whether they are called the factors of production or the members of the organization coalition. Agency theory predicts that there is an existing interdependency between the stockholders and bondholders, and their efficient arrangement or composition will produce successful outcomes for the organization as a whole. In contrast, the resource dependency model predicts that different constituencies represented in the coalition have different degrees of power resulting from the outcome interdependencies among them. Specifically, the powerful members of the coalition will receive proportionately a greater share of organizational outcomes because they have greater influence on the outcomes of the less powerful members. Within the stakeholders perspective this power relationship translates into the development of strategies for increasing the autonomy of the organization and for manipulating the existing interdependencies.

Hypotheses and Research Methodology

This research aims to provide a meaningful test of the predictions made by the alternative approaches, particularly the agency and the

resource dependency models. Both of these models implicitly or explicitly argue that there exist interdependencies between various actors, especially with respect to their outcomes. Simultaneous relationships among the outcomes received by different parties in the organization influence the outcomes received by, as well as the power relationships among these parties as members of the organization. More specifically, the following hypotheses are developed and tested in this research:

1 - According to agency theory a) there exists a simultaneous relationship between the outcomes of the bondholders and the stockholders, and b) compared to other interest groups, such as customers or suppliers, one should observe relatively stronger simultaneous relationship between the bondholders and stockholders in terms of outcome interdependencies.

2 - According to the resource dependency perspective, the greater the outcome control power of a constituency, the greater the outcomes received by that constituency.

As is apparent from these hypotheses, the emphasis of this research is on the outcomes obtained by different constituencies and the interdependencies among these outcomes. It is argued that the nature of these interdependencies not only determines the outcomes received by different constituencies but also determines their respective outcome control powers and the role of managers in relation to these constituencies.

In order to test these propositions it was necessary to resolve three interrelated problems. First of all, it was necessary to identify

a set of critical constituencies and a set of relevant performance measures associated with the outcomes received by them. Second, it was necessary to identify the simultaneous relationships between these outcomes which can provide information about the existing interdependencies between these interest groups as well as their outcome control powers. In other words, a set of correlations between the constituencies' outcomes was not sufficient to measure the independent influence of each constituency's outcomes on the others. The influence of the environment on these outcomes must also be taken into account in the calculation of outcome interdependencies. And finally, it was necessary to develop a measure of outcome control power which takes into consideration and are based on these outcome interdependencies..

Identification of critical constituencies and their outcomes:

The set of all constituencies of an organization can include parties ranging from stockholders to government agencies and special interest groups, but for the purpose of this study only those groups which represent the primary task environment of the organization were selected--the stockholders, bondholders, customers, and other short term interest groups such as suppliers, short term creditors and employees. It is assumed that these different constituencies, because of their unique relationship with the organization, are interested in different economic aspect of a firm's operations and performance.

The literature on financial analysis indicates that different users of financial accounting information utilize different aspects of a firm's financial performance. For instance, investors are mainly concerned with profitability, and lenders with solvency information.

(Lev, 1974) In other words, it is possible to identify certain financial information, particularly financial ratios, which are relevant measures of the firm's performance with respect to different interest groups. This does not mean, however, that these groups are directly responsible for and have control over these outcomes. Financial accounting information including financial ratios are the outcomes of managerial decision making. They represent how the limited resources of the firm are allocated to different constituencies. Furthermore, these decisions are the outcomes of both strategic choices of the managers, their perception of the constituencies' importance and the uncontrollable environmental factors. In this sense, financial ratios can be considered as surrogates for measuring the impact of managerial decision making on the outcomes of different interest groups whom managers must satisfy.

Empirical research in the area of financial ratios has produced some important findings which are useful for this purpose. Different classifications of most or all financial ratios indicate that there are some major independent classes of financial ratios. For instance, when the most commonly used financial ratios are factor analyzed, there are some consistent empirical similarities among alternative financial ratios (Gupta and Huefner, 1972; Pinches et al. 1973, 1975; Cheng and Skimenda, 1981). The major implication of these findings is that even though these ratios utilize a common data base of financial information, they produce approximately seven independent factors. Furthermore, most of the common factors found in these empirical studies correspond to the theoretical classification of financial ratios,

which are oriented to the needs of the outside users, in our case the major constituencies. Based on this theoretical and empirical knowledge, four classes of outcome measures are identified--return on equity, financial leverage, short-term liquidity, and turnover ratios. Each of these are then matched with different groups of constituencies: return on equity for residual claimants, financial leverage for bondholders, short term liquidity for suppliers, employees and short-term creditors, and turnover for customers. Within each class of financial ratios a specific ratio is selected by using two criteria: whether or not it is most commonly used in empirical studies; and whether or not it had high factor loading in these empirical studies. In the final analysis, the following four ratios are selected as representing how the firm's limited resources are allocated among four groups of constituencies: return on equity, debt to total assets, quick ratio, and sales to total assets. These ratios represent the four outcome variables used in the study.

Identification of outcome interdependencies:

Both in agency and constituency perspectives, it is implicitly or explicitly argued that there exist outcome interdependencies among the interest groups and these interdependencies influence the allocation of resources. In order to test the propositions developed earlier, the degree of interdependencies between interest groups must be identified.

If we view alternative measures of performance as outcomes of different constituencies, the relationship between these performance measures within a given industry can be expressed in a simultaneous

system of equations that explicitly recognizes the interdependencies between these outcomes. Using Ackoff's (1970) formulation of strategic management, the performance of an organization is described as a function of both controllable management decision variables, and non-controllable environmental variables.

Performance = f(Controllable decision variables, non-controllable environmental variables)

Given the simultaneous and interdependent nature of the dynamic relationship between different measures of performance, the general dynamic model can be expressed as follows:

$$P_1 = f(P_2, \ldots, P_n, C_1, NC_1)$$
$$\vdots$$
$$P_n = f(P_1, \ldots, P_{n-1}, C_n, NC_n)$$

P_i = performance measure with respect to ith constituency

C_i = set of controllable variables directly related with the ith performance

NC_i = set of noncontrollable environmental variables directly related to the ith performance measure

n = number of constituency groups

Table 1 presents the model specification and the list of variables included in the model. The independent variables were selected based on three criteria: 1) theoretical significance based on their use in the theoretical and empirical literature, 2) availability of time series data, and 3) measures of each variable at the interval or ratio

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Insert Table 1 about here

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scale level. Because this research concentrates on identifying the simultaneous relationship between different outcome variables, the selection of both controllable and uncontrollable independent variables is based on previous literature--and only those variables most commonly utilized in this type of research. (Schendel and Patton, 1978; Martin, 1976; Hurdle, 1974)

In terms of testing the proposed model, there are two general classes of techniques which can be used to estimate the parameters of the model: the techniques of single model equation such as ordinary least squares (OLS), or generalized least squares (GLS) and the techniques of simultaneous model estimations such as two stage (2SLS) and three stage least squares (3SLS). In a single equation model estimation, the explanatory variables are assumed to be predetermined. Thus, the covariance between the error terms and the explanatory variables is assumed to be zero. In our model, however, it is assumed that interdependence among the equations exist. The four performance variables and the endogenous variables jointly determined by the system of four equations. In this case, the assumption of zero covariance among the error terms and the endogenous variables is violated. As a result the techniques of single equation is inappropriate. Applying such a technique will bias the estimates of the parameters.

Various techniques of simultaneous models estimation overcome this covariance problem. In the case of 2SLS, the simultaneous nature of the equations are considered but in a limited way. In estimating each

of the equations in the system, no information about the other equations is taken into account. 3SLS technique, however, overcomes this problem. (Zellner and Theil, 1962) The error terms from the 2SLS are estimated and used in the 3SLS. Given the nature of the theoretical model, 3SLS was selected as an appropriate method for estimating the parameters in the model.

Identification of outcome control power:

One basic advantage of the simultaneous model of estimation is that it identifies not only the simultaneous relationships between performance measures but also the magnitude of these relations. As shown in Table 1, it is possible to identify the independent contribution of one outcome measure in explaining the variance in others. Thus the standardized b coefficients can be conceptualized as the outcome control power of constituencies. It needs to be reiterated here again that what is meant by control power is not an actual control of a given constituency on the decisions of managers, but is the outcome of managerial decision making under uncertainty generated in the environment. As such they are only surrogate measures.

The sample

Most of the early studies dealing with the simultaneous relations among performance measures at the business strategy level have concentrated on single industries. Given the research questions posed here, however, a comparative analysis is necessary. The present study covers 10 manufacturing industries. Several other manufacturing industries which were included in the original sample, were later

deleted because of extensive missing data. Because the study utilizes pooling time series cross section analysis, not only general industry but specific company data were necessary for the simultaneous time series analysis for each industry. The final sample contains 160 companies or 16 on the average for each industry covering the period of 1972-1980. The performance data for each company were calculated from the Standard and Poor's Compustat tapes.

Analysis and Results

To test the hypotheses derived from the agency and constituency perspectives the analysis was conducted in two stages. In the first stage, the three-stage least squares (3SLS) technique was used to estimate the equations and identify the significant simultaneous relations between difference performance variables for each industry. In the second stage, the results of the 3SLS were used to test the main hypotheses.

Identification of Outcome Interdependencies

The results of the 3SLS analyses of individual industries (see Appendix) show that on the average the four sets of simultaneous equations collectively explained 89 percent of the variance (the mean weighted R^2 = .89). These results suggest that the initial model for the first stage of the analysis is reasonable. Because the exact meaning of the weighted R^2 is controversial, however, it should be emphasized that the initial model is only reasonable rather than definite. For the rest of the analysis the critical issue is the nature of interdependencies between performance outcomes of the four interest

groups as estimated by the analyses. Table 2 presents the simultaneous interdependencies between the constituencies' outcomes in each of the ten industries included in the sample. Each column in these square matrices shows how a given performance variable is influenced by the three other constituencies' outcomes. Respectively, each row in the matrix shows how a given constituency's outcome influences the outcomes of others. Numbers in these matrices are the standardized b coefficients for which p is .10 or less. Nonsignificant relations are indicated by .00.

Insert Table 2 about here

It is clear from Table 2 that there exist simultaneous relations between not only the residual claimants and the bondholders but among all the interest groups. Furthermore, the outcome interdependencies are competitive as well as symbiotic in half of the cases. In only 10 percent of the cases are the relationships unidirectional, and they are randomly distributed. These results provide some initial support for the resource dependency perspective that outcome interdependencies, both competitive and symbiotic, exist among the major interest groups represented in the dominant coalition of organizations. (Pfeffer and Salancik, 1978)

In order to observe the strength of these simultaneous interdependencies, correlations between the standardized b coefficients for different constituencies were calculated. The logic of the analysis rests on the argument that if independent influence of two performance measures on each other (i.e., b_{ij} and b_{ji}) is highly correlated, then

there exists a high degree of outcome interdependency between these two groups of constituencies. Even though such a correlation cannot distinguish between symbiotic and competitive interdependencies, it can indicate the magnitude of the outcome interdependency between constituencies. As shown in Table 3, results indicate that there exists two sets of constituencies who have a high degree of outcome interdependency. In one group, the residual claimants and the bondholders exert an equal degree of influence on each other's outcome. In the other group, a similar relationship exists between the customers and the short term interest. It is important to point out that these groups represent two distinct classes of constituencies in terms of outcome interdependencies because none of the other correlations in the table are significant.

Insert Table 3 about here

These findings also indicate that the theoretical relationships articulated in the financial literature between the stockholders and the bondholders is relevant. Even though there exists some degree of outcome interdependency among all interest groups, these two constituencies represent a critical set of interdependencies for the firm.

Outcome Control Power and the Allocation of Performance Outcomes

In the second stage of the analysis the relationship between the degree of outcome control of each interest group and its impact on the performance outcomes obtained by these groups were investigated. Here the analysis shifts from individual industries to a comparative analysis of the 10 industries in the sample. The analyses in this stage

were conducted in two steps. First, based on the outcome interdependencies presented in Table 2, the outcome control power of different constituencies were calculated, and the interrelationships between them were examined. In the second step, the relationships between outcome control powers and the long-term outcomes received by the four constituencies were investigated to test the second hypothesis.

Outcome control power of a constituency can be conceptualized in several ways. If we assume that standardized b coefficients indicate the degree of influence of one constituency on others' outcomes, the sum of absolute values of standardized b's for each row in Table 2 represents the aggregate outcome control power of each constituency ($\sum_{i=1}^{3} |\beta_{i.}|$). The sum of each column, on the other hand, represents the aggregate outcome dependency of each constituency ($\sum_{j=1}^{3} |\beta_{.j}|$). Aggregate outcome control power and outcome dependency were calculated by taking the absolute values of β_{ij} because we are interested only in degrees of outcome control not their signs. By utilizing these two aggregate measures, a third measure of outcome control power was also calculated. The net outcome control power of each constituency was calculated by subtracting the aggregate outcome dependency from the aggregate outcome control power ($\Sigma|\beta_{i.}|-\Sigma|\beta_{.j}|$).

Table 4 shows the correlations between the four constituencies in terms of the three different measures of outcome control. The results

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Insert Table 4 about here

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provide support for both the agency and the constituency perspective in an interesting way. As the agency theory predicts, the aggregate outcome

control power of residual claimants and bondholders are positively correlated, indicating that there exists a strong positive relationship between the outcome control powers of these two constituencies. None of the other correlations are significant in this group. Furthermore, the aggregate outcome dependency among different constituencies is only significantly correlated in the case of the customers and the short-term interest groups. This result shows that they are equally influenced by all the other constituencies' outcome control. The last set of correlations between the net outcome control powers of different constituencies provides support for the constituency perspective. They indicate that power distribution is competitive and that increase in one interest group's net outcome control power results in a net decrease in the others' power. Here again the competitive power relationship among constituencies are not between the residual claimants and the bondholders or the customers and the short-term interest group but between the two major groups of constituencies identified in Table 3. Competitive interdependency exists between the two groups representing the residual claimants, and the bondholders and the customers, and the short-term interests.

The final step in this stage of the analysis is to investigate the relationships between the three measures of outcome-control and the performance outcomes received by these constituencies. Table 5 presents

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Insert Table 5 about here

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the results of the analysis. For the two major groups of constituencies, the results present some striking differences. For the group

representing the residual claimants and the bondholders, their long-term average outcomes are positively correlated to their aggregate outcome control powers. Given the symbiotic power relations between them, it is possible to state that both parties gain, i.e., their long term average outcomes increase, as long as any one of them has greater outcome control power. For the group representing the customers and the short-term interests, however, the relationship is reversed. When their aggregate outcome dependency increases, their long-term average outcomes also increase. The critical implication of these relations is that the competitive outcome interdependency between the two groups identified in Table 4 (column 3) can only be converted into a stable symbiotic interdependency if this reverse relationship exists. This is the only way in which all the parties gain or lose at the same time and in which the conflict of interest, which exists between the constituencies, is converted into a symbiotic outcome interdependency. This can easily be observed in the case of short term interest group. The negative correlation between the long-term average outcomes and the net outcome control power indicates that when the power of this constituency increases its outcome decreases.

Discussion and Implications

The results of this investigation indicate that agency and constituency perspectives developed in finance and organization theory are not contradictory but complementary. The basic source of this complementarity is due to not only the empirical findings presented in this paper, but also to the fundamental question asked by these alternative perspectives. Whether an organization is viewed as a set of contracts

among the factors of production or as a coalition of interest groups, both perspectives fundamentally ask the same question: when each member of the coalition or the factors of production is motivated by self-interest, how is it possible that the organization survives and, more importantly, exists as an efficient form of economic association? (Fama, 1980)

Even though each perspective attempts to answer this fundamental question within its own theoretical framework, in the final analysis the perspectives do converge. Agency theory argues that the relationship between the shareholders and the bondholders may lead to agency problems (Barnea, Haugen, and Senbet, 1982). For instance, debt financing with limitations on shareholders' liability can easily give rise to shareholders' incentive to select higher risks than those optimal to the firm as a whole, and to transfer of wealth from bondholders to shareholders. Such agency problems are resolved, however, because even though each party acts in its own self-interest, all parties realize that their destinies depend to some extent on the survival of the firm as a whole in its competition with other firms in the market. (Alchian and Demsetz, 1972; Jensen and Meckling, 1976) In other words, the competitive outcome interdependency is converted into symbiotic interdependency.

Within the constituency perspective, especially in resource-dependency theory, the same question is answered by concentrating on the resource interdependencies within the coalition of interest groups representing the organization. Interdependence which characterizes the relationship between agents creating an outcome influences not only the

ability of the organization to achieve its desired outcomes but also influences the nature of the desired outcome itself. The coalition of interest groups participating in an organization at a point in time defines the activities of the organization. The conflict of interest is converted into a symbiotic interdependence by manipulating how outcomes are achieved and are allocated as well as by manipulating which outcomes are desired by the members of the coalition.

As the results presented in Tables 4 and 5 show, conflicting outcome control powers of different interest groups are converted into symbiotic outcome interdependencies as a result of stable patterns of interactions between the nature of interdependencies and the outcomes allocated to the constituencies. Given the comparative nature of the study, it is possible to argue that the needed conversion from competitive to symbiotic interdependency is built into the system of interactions among the four interest groups identified in the investigation.

One basic implication of these findings and the alternative perspectives discussed earlier is that a new description of the managerial role is necessary. Both the agency and the constituency perspectives implicitly or explicitly argue that managers as agents of a specific class of principals, namely the shareholders, is no longer a valid argument. Whether managers are conceived as those who represent yet another factor of production or as those who establish negotiated environments favorable to the organization, they are agents without principals, but with constituencies. Their role is to sustain the belief that future interdependencies are likely to endure and that the organization as a nexus of contracts among interest groups is likely

to survive because their destinies depend to some extent on the survival of the coalition itself.

Similar interpretations of the symbolic nature of the managerial role have also been expressed recently in the legal literature specifically in relation to contract law. (MacNeil, 1980) In a world of agents of contractual relations, rather than agents of principals, managers are subject to the need to deal with multiple constituencies, including those of which they themselves are members. To define the manager as an agent who owes reasonable effort and unswerving loyalty to a set of principals becomes logically impossible under these conditions. In a world without principals, contractual solidarity is not a by-product of discrete contracts among a group of self-interested parties but a by-product of the common belief in effective future interdependencies and their stability. In MacNeil's (1980) terms, each party in the coalition must give an affirmative answer to the following question: "Do I think the conditions will continue to exist whereby each of us will desire and be able to depend on the other?" (1980:92). The creation of such an organic contractual solidarity among the members of a coalition representing the organization emphasizes the symbolic role the manager must play. In other words, manager's role is not to finds ways to reduce the existing interdependencies between the constituencies. On the contrary, his/her role is to sustain these outcome interdependencies.

Given the nature of the stable pattern of outcome and power interdependencies presented in the paper, the symbolic role of managers as agents without principals is critical for the creation of the needed

contractual solidarity and the stability of constituent coalition. Their role is to convince the constituencies that the situation is not a zero-sum game but a mix motive situation, and as long as the existing interdependencies are maintained all will gain from the coalition.

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Table 1

Model Specification and the
List of Variables Used in the Simultaneous Equations
for Each Industry in the Sample

$P_1 = f(P_2, P_3, P_4, C_1, C_2, C_3, NC_1, NC_2, NC_3, NC_4, NC_5, NC_6, NC_7, NC_8, NC_9)$

$P_2 = f(P_1, P_3, P_4, C_1, C_2, NC_1, NC_2, NC_3, NC_4, NC_5, NC_6, NC_7, NC_8, NC_9)$

$P_3 = f(P_1, P_2, P_4, C_4, C_6, C_7, NC_1, NC_2, NC_3, NC_4, NC_5, NC_6, NC_7, NC_8, NC_9)$

$P_4 = f(P_1, P_2, P_3, C_8, C_9, NC_1, NC_2, NC_3, NC_4, NC_5, NC_6, NC_7, NC_8, NC_9)$

A - Performance Measures with Respect to Individual Constituencies (for each firm in the industry)

Return on Equity (Stockholders) (P1)
Sales/total assets (Customers) (P2)
Debt/total assets (Bondholders) (P3)
Quick Ratio (Short Term Interest Group) (P4)

B - Controllable Decision Variables (for each firm in the industry)

Advertising expenses (C1)
Research and development expenditures (C2)
Dividend/income (C3)
Investment (C4)
Receivables/sales (C5)
Capital expenditures (C6)
Total debt (C7)
Rental and other scheduled expenditures (C8)
Percent change in sales (C9)

C - Uncontrollable Environmental Variables

Total Industry Advertising Expenditures (NC1)
Total Industry Research and Development Expenditures (NC2)
Total dividends distributed in the industry (NC3)
Total investment expenditures in the industry (NC4)
Total account receivables in the industry (NC5)
Total Capital Expenditures of the industry (NC6)
Total long-term debt in the industry (NC7)
Total short-term expenditures of the industry (NC8)
Market share (NC9)

The variable numbers correspond to the variable numbers used in the Appendix.

Table 2

The Simultaneous Relations Between the Constituencies' Outcomes in Each Industry Included in the Sample

Ind. 2200 as dependent variable

as independent variable	ROE	turnover	leverage	quick
ROE		+.232	+.138	+.220
Turnover ratio	+.440		-.023	-.350
Leverage ratio	+.141	-.549		-.430
Quick ratio	+.325	-.716	-.390	

Ind. 2400 as dependent variable

as independent variable	ROE	turnover	leverage	quick
ROE		+.380	-.570	.00
Turnover ratio	+1.68		+1.32	.00
Leverage ratio	-.340	+.140		.00
Quick ratio	.00	.00	.00	

Ind. 2830

	-.100	.00	+.20
-.747		-.660	+.260
-.515	-.420		+.130
+.448	+.430	+.027	

Ind. 2844

	.00	+.866	+.950
+.023		-.003	-.160
+.861	-.830		-1.11
+.107	-.240	-.250	

Table 2 (cont'd.)

Ind. 3079

	-.660	+.620	-.190
-.157		+.150	-.100
+.415	+.500		+.230
-.026	-.130	+.120	

Ind. 3540

	-.065	.00	+.298
-.022		-.191	+.050
-.170	-.190		+.122
+.545	+.260	+.138	

Ind. 3560

	-.385	+.700	.00
-.120		.00	+.220
+.460	.00		.00
.00	+.300	.00	

Ind. 3573

	.00	.00	+.140
.00		-.226	.00
.00	-.026		+.070
-.056	-.102	.00	

Table 2 (cont'd.)

Ind. 3679

	.00	-.190	.00
+.4.57		.00	.00
.00	.00		-.210
.00	.00	.00	

Ind. 3841

	+.420	.00	.00
+.370		.00	-.350
.00	-.110		-.350
.00	-.170	.00	

The numbers in each cell represent the standardized b values significant at $p < .10$. Nonsignificant relations are represented by .00.

Table 3

Correlations Between the Constituencies' Degrees of Outcome Control

	Residual Claimants	Customers	Bondholders
Customers	.27		
Bondholders	.86*	.42	
Short-term interest	.33	.88*	.41

*p < .001

Table 4

Correlations Between Constituencies' Aggregate Outcome Control Powers, Aggregate Outcome Dependency, and Net Outcome Control Powers

		Aggregate Outcome Control				Aggregate Outcome Dependency				Net Outcome Control			
		1	2	3	4	1	2	3	4	1	2	3	4
Residual claimants	(1)	1.00	-.32	.73 (.008)	-.05	1.00	-.42	.06	-.16	1.00	-.92 (.001)	.28	-.22
Customers	(2)		1.00	-.33	-.38		1.00	.24	.55 (.05)		1.00	-.49 (.08)	.10
Bondholders	(3)			1.00	-.38			1.00	.15			1.00	-.55 (.05)
Short-term interest	(4)				1.00				1.00				1.00

Numbers in parenthesis are the significant p values.

Table 5

The Relationships Between the Constituencies' Outcomes and the Three Aggregate Measures of Outcome Control Power

Measures of Outcome Control Power	Long-term Average Outcomes			
	Residual Claimants	Customers	Bondholders	Short-term Interest
Aggregate Outcome Control Power	.57 (.04)	-.10	.47 (.07)	.25
Aggregate Outcome Dependency	-.10	.52 (.05)	.23	.83 (.001)
Net Outcome Control Power	.30	-.22	.25	-.68 (.01)

Numbers in parenthesis are the significant p values.

EQ1: RC [redacted]) is the dependent variable

Industry 4 digit SIC Code	P_2	P_3	P_4	C_1	C_2	C_3	NC_1	NC_2	NC_3	NC_4	NC_5	NC_6	NC_7	NC_8	NC_9
[1]2200	.231	.372	.093	-.0000011	.0045	-.0043	+.013	-.0017	.00028	-.00026	.00001	-.00037	-.00011	-.0081	.248
	(4.65)	(2.02)	(2.97)	(-.00007)	(.914)	(-1.58)	(2.09)	(-.65)	(.22)	(-1.80)	(.080)	(-2.16)	(-1.37)	(-3.25)	(1.09)
[2]2400	.232	-.413	-.039	.014	-.00050	-.0011	-.0066	.00010	-.00012	.000053	.00014	7.495	-.000096	-.000079	1.12
	(8.69)	(-2.31)	(-.853)	(1.64)	(-.434)	(-.341)	(-.562)	(.031)	(-.100)	(.35)	(.41)	(.0028)	(-.828)	(-.151)	(7.97)
[3]2830	-1.975	-2.271	1.093	.00011	-.0013	.293	-.0023	-.0017	.0089	.0026	-.0007	-.0039	-.00041	.017	7.41
	(-3.83)	(-3.34)	(6.53)	(.506)	(-.844)	(1.051)	(-.713)	(-.283)	(.82)	(.54)	(-.48)	(-.734)	(-.760)	(.912)	(3.21)
[4]2844	.120	.596	.067	-.0002	-.00054	-.00044	-.0003	.0096	-.0039	-.0055	.00002	.0052	-.0010	-.00053	.757
	(3.14)	(17.43)	(5.08)	(-1.46)	(.58)	(-.18)	(-.062)	(2.54)	(-1.97)	(-2.77)	(.050)	(2.73)	(-3.07)	(-.14)	(5.40)
[5]3079	-.190	.505	-.131	.0020	-.0024	.0011	.0099	-.014	.027	-.0012	-.0015	.0013	-.0001	-.0008	.103
	(-9.13)	(6.34)	(-2.39)	(.685)	(-1.021)	(.07)	(1.19)	(-.774)	(1.29)	(-1.41)	(-.581)	(.706)	(-.250)	(-.137)	(.60)
[6]3540	-.133	-.401	.331	-.0005	.0003	.00036	.0053	.0052	-.012	.0031	-.00022	-.00054	-.00056	.0097	.477
	(-2.38)	(-2.60)	(6.42)	(-.621)	(.202)	(.03)	(2.66)	(.42)	(-1.38)	(1.48)	(-.335)	(-.411)	(-1.03)	(.477)	(2.68)
[7]3560	-.105	.351	.037	-.0007	-.0007	.0035	.0078	.0024	-.0029	-.00032	.00044	.00012	-.00040	-.001	.294
	(-1.78)	(4.56)	(.49)	(-.32)	(-1.11)	(.91)	(1.21)	(.979)	(-1.04)	(-.40)	(1.16)	(.147)	(-1.03)	(-.543)	(1.337)
[8]3573	1.529	-3.692	3.142	.015	-.0062	-.353	.058	-.018	-.167	.0036	.011	-.0037	-.0050	.015	6.68
	(.651)	(-.937)	(2.09)	(.279)	(-.44)	(-.136)	(.354)	(-.623)	(-1.46)	(.37)	(.219)	(-.616)	(-1.22)	(.141)	(.734)
[9]3679	1.92	.027	-.240	.175	.155	.102	-.617	-.195	-.252	-.050	.036	.077	-.024	.539	-10.23
	(2.85)	(.035)	(-.513)	(1.17)	(1.69)	(1.54)	(-2.28)	(-2.23)	(-1.37)	(-2.14)	(1.54)	(1.65)	(-.66)	(1.76)	(-1.58)
[10]3841	.260	.135	-.015	-.0052	.0069	.00028	.0052	-.0056	-.0035	.0033	-.0019	-.0039	.0019	.020	-.424
	(5.07)	(.961)	(-.592)	(-3.57)	(4.03)	(.018)	(.602)	(-1.12)	(-.33)	(.693)	(-.730)	(-.732)	(.693)	(.763)	(-2.45)

EQ2: Turnover Ratio (P_2) is the dependent variable

Industry 4 digit SIC Code	Independent Variables													
	P_1	P_3	P_4	C_1	C_2	NC_1	NC_2	NC_3	NC_4	NC_5	NC_6	NC_7	NC_8	NC_9
[1] 2200	3.084	-2.168	-.470	-.0015	.0032	-.060	.012	.00090	.0011	-.00024	.0016	.00066	.036	-1.351
	(4.50)	(-3.92)	(-5.63)	(-.365)	(.251)	(-2.16)	(1.11)	(.16)	(1.75)	(.322)	(2.133)	(1.92)	(3.79)	(-1.64)
[2] 2400	4.173	1.675	.110	-.062	.00022	.037	.00013	-.00084	-.00028	-.00059	.00011	.00050	-.00010	-4.82
	(9.77)	(2.21)	(.570)	(-1.80)	(.45)	(.82)	(.103)	(-.17)	(-.489)	(-.43)	(.110)	(1.13)	(-.050)	(-11.64)
[3] 2830	-.401	-1.275	.558	-.000045	-.00058	-.0010	-.0011	.0049	.00017	-.0005	-.0023	-.00017	.0095	3.909
	(-.342)	(-7.57)	(7.33)	(-.36)	(-1.37)	(-.66)	(-.381)	(.99)	(.83)	(-.079)	(-1.010)	(-.69)	(1.15)	
[4] 2844	3.448	-2.37	-.264	.0012	-.010	-.0002	-.052	.025	.034	-.00073	-.032	.0060	-.00023	-2.05
	(1.59)	(-2.11)	(-2.14)	(.488)	(-.965)	(-.077)	(-2.25)	(2.22)	(3.14)	(-.22)	(-3.02)	(3.25)	(-.01)	(-1.06)
[5] 3079	-4.87	2.418	-.618	.015	-.021	.046	-.066	.138	-.0064	-.0085	.0067	-.0003	-.0072	.777
	(-.674)	(4.80)	(-2.20)	(.71)	(-1.19)	(1.19)	(.737)	(1.41)	(-1.52)	(-.708)	(.800)	(-.120)	(-.257)	(.66)
[6] 3540	-2.35	-1.78	1.175	-.0027	.0062	.015	.080	-.095	.015	-.0015	-.0015	-.004	.086	1.00
	(-1.67)	(-3.08)	(2.35)	(-.79)	(.453)	(1.43)	(1.87)	(-3.57)	(2.013)	(-.66)	(-.33)	(-2.65)	(1.23)	(.96)
[7] 3560	-2.37	.058	.711	-.0083	-.0036	.038	.0081	-.017	-.00056	.0023	-.0001	-.00099	-.0034	1.055
	(-2.16)	(.11)	(3.61)	(-.691)	(-1.030)	(1.27)	(.71)	(-1.39)	(-.16)	(1.37)	(-.315)	(-.58)	(-.277)	(.319)
[8] 3573	.043	-.894	-.232	-.0042	-.00069	-.035	(-.0031	.015	-.00040	-.0012	.0011	.00018	.024	-.743
	(.98)	(-5.41)	(-2.11)	(-.810)	(-.52)	(-2.70)	(-.101)	(-1.53)	(-1.015)	(-1.417)	(.46)	(.46)	(3.11)	(-.859)
[9] 3679	.219	-.218	.271	-.06	-.06	.17	.054	.055	.012	-.0084	-.020	.0049	-.118	4.95
	(1.28)	(-.78)	(1.53)	(-.941)	(-1.46)	(1.33)	(1.41)	(.709)	(1.165)	(-.798)	(-1.066)	(.729)	(-.848)	(1.89)
[10] 3841	2.30	-.794	-.181	.013	-.017	-.050	.047	.050	-.042	.021	.045	-.020	-.221	1.27
	(4.91)	(-2.07)	(-2.44)	(3.13)	(-3.73)	(-2.10)	(3.68)	(1.65)	(-3.25)	(3.01)	(3.14)	(-2.74)	(-3.07)	(-2.81)

Industry 4 digit SIC Code	Independent Variables														
	P_1	P_2	P_4	C_4	C_6	C_7	NC_1	NC_2	NC_3	NC_4	NC_5	NC_6	NC_7	NC_8	NC_9
[1]2200	.894	-.209	(-.144)	-.00063	-.00057	.0012	-.023	.0024	-.00098	.00046	.000030	.00060	.00022	.012	-2.26
	(4.083)	(-2.151)	(-4.53)	(-.679)	(-.675)	(2.16)	(-3.25)	(.671)	(-.538)	(2.73)	(.14)	(2.95)	(2.34)	(4.63)	(-1.83)
[2]2400	-1.313	.313	.051	-.0008	.000054	.00016	-.0036	-.0015	-.00051	.00008	.00020	.000002	-.00008	-.00015	1.231
	(-4.021)	(5.95)	(.580)	(-.244)	(.171)	(1.17)	(-.180)	(-.270)	(-.205)	(.347)	(.38)	(.0063)	(-.432)	(.88)	(3.304)
[3]2830	.096	-.6614	.223	.00035	-.0014	.00006	.00015	-.0012	.0042	.0029	-.0010	-.0031	-.00002	.010	2.35
	(-.89)	(-6.77)	(2.31)	(.37)	(-1.26)	(.700)	(.150)	(-.74)	(1.46)	(2.05)	(-2.13)	(-2.076)	(-.154)	(2.07)	(3.20)
[4]2844	1.654	-.200	-.124	-.00058	.00066	.00007	-.0000076	-.017	.0072	.010	-.000012	-.0096	.0018	.00067	-1.33
	(12.82)	(-2.55)	(-6.43)	(-.666)	(.700)	(.476)	(-.0066)	(-2.43)	(1.89)	(2.70)	(-.0118)	(2.676)	(2.93)	(.091)	(-6.04)
[5]3079	1.89	.361	.311	.0000059	-.00036	.000041	-.021	.035	-.060	.0027	.0030	-.0024	.00035	.00063	-.072
	(7.49)	(5.98)	(3.63)	(.006)	(-.223)	(.040)	(-1.21)	(.90)	(-1.40)	(1.44)	(.55)	(-.632)	(.299)	(.050)	(-.198)
[6]3540	-.534	-.237	.293	-.00021	-.0033	.0016	.0026	.029	-.034	.0036	-.0001	.00081	-.0018	.033	.458
	(-1.53)	(-4.96)	(2.54)	(-.142)	(-1.86)	(3.35)	(.943)	(2.28)	(-4.13)	(1.709)	(-.182)	(.61)	(-3.53)	(1.70)	(1.52)
[7]3560	2.406	.090	.051	.0024	-.0027	.00042	-.013	-.0049	+.0044	.00070	-.00076	-.00044	.00088	.004	-.836
	(5.68)	(.673)	(.373)	(1.109)	(-1.22)	(1.89)	(-.940)	(-.91)	(.75)	(.413)	(-.92)	(-.260)	(1.06)	(.595)	(-1.45)
[8]3573	-.0036	-.415	.052	-.0010	.000055	.00039	-.016	-.0015	-.0023	.000057	-.000008	.00052	-.00019	.95	-.373
	(-1.43)	(-4.62)	(.870)	(-4.08)	(.154)	(1.53)	(-2.015)	(-.855)	(-.384)	(.238)	(-.015)	(1.55)	(-.798)	(3.26)	(-.76)
[9]3679	-.224	-.089	.0071	-.068	.047	.010	-.103	-.016	-.053	-.0066	.011	.0016	-.0029	.072	.455
	(-2.769)	(-.66)	(.079)	(-5.56)	(3.98)	(4.05)	(-1.51)	(-.73)	(-1.28)	(-1.12)	(2.12)	.151	(-.817)	(.955)	(.461)
[10]3841	.016	-.081	-.017	-.0014	.00078	.00085	-.011	.0099	.011	-.010	.0056	.011	-.0050	-.053	-.051
	(.06)	(-1.04)	(-.50)	(-.46)	(.24)	(3.54)	(-1.10)	(1.65)	(.871)	(-1.89)	(1.78)	(1.83)	(-1.55)	(-1.67)	(-.24)

Eq 4: Quick Ratio (P_4) is the dependent variable

Industry 4 digit SIC Code	Independent Variables														Weighted R^2 for Systems
	P_1	P_2	P_3	C_8	C_9	NC_1	NC_2	NC_3	NC_4	NC_5	NC_6	NC_7	NC_8	NC_9	
[1]2200	6.76	-2.088	-4.52	-.0039	.000024	-.130	.0252	.0010	.0024	-.0004	.0034	.0013	.076	-2.538	.92
	(4.42)	(-7.37)	(-7.15)	(-.26)	(.0089)	(-2.39)	(1.053)	(.094)	(1.91)	(-.276)	(2.227)	(2.025)	(4.29)	(-1.11)	
[2]2400	-7.308	.590	-2.671	-.023	.847	.135	.036	-.026	-.00086	.00063	.0025	.0012	-.0086	5.60	.99
	(-.923)	(.730)	(-1.02)	(-.991)	(.529)	(1.44)	(1.26)	(-2.13)	(-.68)	(.20)	(1.047)	(1.51)	(-1.68)	(.86)	
[3]2844	.784	1.635	1.936	.00034	.045	.0021	.0017	.0076	-.0018	.00043	.0029	.00035	-.013	-6.100	.94
	(3.211)	(6.077)	(3.83)	(.143)	(.246)	(.63)	(.266)	(-.692)	(-.396)	(.311)	(.565)	(.624)	(-.715)	(-3.59)	
[4]2844	12.72	-2.033	-7.91	-.0029	-.0013	-.00050	-.149	.065	.091	-.00055	-.087	.016	.0032	-9.69	.89
	(5.12)	(-3.36)	(-6.29)	(-.212)	(.204)	(-.051)	(-2.62)	(2.16)	(3.24)	(-.064)	(-3.19)	(3.412)	(.052)	(-5.46)	
[5]3079	-4.36	-.846	2.42	-.020	.0020	.056	-.113	.179	-.0076	-.0078	.0060	-.0011	.0035	.473	.92
	(-3.009)	(-4.16)	(3.26)	(-.508)	(.401)	(.051)	(-.990)	(1.45)	(-1.39)	(-.47)	(.519)	(-.327)	(.092)	(.402)	
[6]3540	2.732	.453	1.230	.0068	.019	-.015	-.019	.041	-.0097	.00065	.0015	.0019	-.033	-1.422	.93
	(4.89)	(2.825)	(0.85)	(.604)	(.299)	(-2.65)	(-.561)	(1.55)	(-1.50)	(.320)	(.389)	(1.19)	(-.55)	(-2.971)	
[7]3560	1.923	1.114	.333	.0083	-.00060	-.047	-.011	.022	.001	-.0030	-.0032	.0016	.010	-1.127	.92
	(1.28)	(6.20)	(.537)	(.743)	(-.240)	(-1.32)	(-.88)	(1.54)	(.487)	(-1.54)	(-.08)	(.835)	(.80)	(-.840)	
[8]3573	.158	-.284	.711	.011	.082	-.0074	.0017	.045	-.00087	-.0033	.092	.0012	.0077	-2.58	.78
	(2.54)	(-1.14)	(2.51)	(1.35)	(1.84)	(-.33)	(.35)	(3.09)	(-1.42)	(-2.66)	(1.42)	(2.11)	(.611)	(-1.84)	
[9]3679	.270	.438	-.830	-.081	-.191	.048	.097	.056	.018	.0055	-.054	.016	-.326	-4.98	.73
	(.642)	(.85)	(-1.60)	(-.81)	(-.80)	(.159)	(1.128)	(.321)	(.705)	(.235)	(-1.37	(.15)	(-1.08)	(-1.78)	
[10]3841	-2.23	-1.28	-1.01	-.001	-.386	-.164	.144	.183	-.147	.073	.156	-.069	-.743	.497	.91
	(-1.29)	(-2.58)	(-.90)	(-.11)	(-.97)	(-2.42)	(4.03)	(2.18)	(-4.43)	(3.77)	(4.12)	(-3.43)	(-3.88)	(.399)	

(Numbers in parentheses are the t values)

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